IFWO

RAW SEQUENCE LISTING   DATE: 08/27/2004
PATENT APPLICATION: US/10/723,475   TIME: 11:58:14

Input Set : **N:\Crf3\RULE60\10723475.raw**
Output Set: **N:\CRF4\08272004\J723475.raw**

```
   1 <110> APPLICANT: CALIFORNIA INSTITUTE OF TECHNOLOGY
   2       LYAPINA, Svetlana
   3       VERMA, Rati
   4       DESHAIES, Raymond
   5 <120> TITLE OF INVENTION: REGULATION OF TARGET PROTEIN ACTIVITY THROUGH MODIFIER
PROTEINS
   6 <130> FILE REFERENCE: CIT1510-3
   7 <140> CURRENT APPLICATION NUMBER: US/10/723,475
   8 <141> CURRENT FILING DATE: 2003-11-25
   9 <150> PRIOR APPLICATION NUMBER: US/10/046,961
  10 <151> PRIOR FILING DATE: 2002-01-14
  11 <150> PRIOR APPLICATION NUMBER: US 60/261,314
  12 <151> PRIOR FILING DATE: 2001-01-12
  13 <150> PRIOR APPLICATION NUMBER: US 60/322,322
  14 <151> PRIOR FILING DATE: 2001-09-14
  15 <150> PRIOR APPLICATION NUMBER: US 60/322,030
  16 <151> PRIOR FILING DATE: 2001-09-14
  17 <160> NUMBER OF SEQ ID NOS: 22
  18 <170> SOFTWARE: PatentIn version 3.1
  20 <210> SEQ ID NO: 1
  21 <211> LENGTH: 14
  22 <212> TYPE: PRT
  23 <213> ORGANISM: Artificial sequence
  24 <220> FEATURE:
  25 <223> OTHER INFORMATION: JAM domain
W--> 26 <221> NAME/KEY: MISC_FEATURE
  27 <222> LOCATION: (1)..(14)
  28 <223> OTHER INFORMATION: Xaa is any amino acid
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  31       1               5                   10
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  34 <211> LENGTH: 17
  35 <212> TYPE: PRT
  36 <213> ORGANISM: Artificial sequence
  37 <220> FEATURE:
  38 <223> OTHER INFORMATION: JAM domain
W--> 39 <221> NAME/KEY: MISC_FEATURE
  40 <222> LOCATION: (3)..(3)
  41 <223> OTHER INFORMATION: Xaa is Tyr or Ile
W--> 42 <221> MISC_FEATURE
  43 <222> LOCATION: (5)..(5)
  44 <223> OTHER INFORMATION: Xaa is Ser or Thr
W--> 45 <221> MISC_FEATURE
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       46 <222> LOCATION: (8)..(16)
       47 <223> OTHER INFORMATION: Xaa is any amino acid
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       50       1               5               10                  15
       51       Asp
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       54 <211> LENGTH: 246
       55 <212> TYPE: PRT
       56 <213> ORGANISM: Homo sapiens
       57 <400> SEQUENCE: 3
       58       Thr Met Ile Ile Met Asp Ser Phe Ala Leu Pro Val Glu Gly Thr Glu
       59       1               5               10                  15
       60       Thr Arg Val Asn Ala Gln Ala Ala Ala Tyr Glu Tyr Met Ala Ala Tyr
       61                   20              25                  30
       62       Ile Glu Asn Ala Lys Gln Val Gly Arg Leu Glu Asn Ala Ile Gly Trp
       63               35              40                  45
       64       Tyr His Ser His Pro Gly Tyr Gly Cys Trp Leu Ser Gly Ile Asp Val
       65           50              55                  60
       66       Ser Thr Gln Met Leu Asn Gln Gln Phe Gln Glu Pro Phe Val Ala Val
       67       65              70                  75                  80
       68       Val Ile Asp Pro Thr Arg Thr Ile Ser Ala Gly Lys Val Asn Leu Gly
       69                   85              90                  95
       70       Ala Phe Arg Thr Tyr Pro Lys Gly Tyr Lys Pro Pro Asp Glu Gly Pro
       71                   100             105             110
       72       Ser Glu Tyr Gln Thr Ile Pro Leu Asn Lys Ile Glu Asp Phe Gly Val
       73               115             120                 125
       74       His Cys Lys Gln Tyr Tyr Ala Leu Glu Val Ser Tyr Phe Lys Ser Ser
       75           130             135                 140
       76       Leu Asp Arg Lys Leu Leu Glu Leu Leu Trp Asn Lys Tyr Trp Val Asn
       77       145             150                 155                 160
       78       Thr Leu Ser Ser Ser Ser Leu Leu Thr Asn Ala Asp Tyr Thr Thr Gly
       79                   165             170                 175
       80       Gln Val Phe Asp Leu Ser Glu Lys Leu Glu Gln Ser Glu Ala Gln Leu
       81                   180             185             190
       82       Gly Arg Gly Ser Phe Met Leu Gly Leu Glu Thr His Asp Arg Lys Ser
       83               195             200             205
       84       Glu Asp Lys Leu Ala Lys Ala Thr Arg Asp Ser Cys Lys Thr Thr Ile
       85           210             215                 220
       86       Glu Ala Ile His Gly Leu Met Ser Gln Val Ile Lys Asp Lys Leu Phe
       87       225             230                 235                 240
       88       Asn Gln Ile Asn Ile Ser
       89                   245
       91 <210> SEQ ID NO: 4
       92 <211> LENGTH: 245
       93 <212> TYPE: PRT
       94 <213> ORGANISM: Homo sapiens
       95 <400> SEQUENCE: 4
       96       Thr Val Arg Val Ile Asp Val Phe Ala Met Pro Gln Ser Gly Thr Gly
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Input Set : **N:\Crf3\RULE60\10723475.raw**
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97      1           5                     10                    15
98      Val Ser Val Glu Ala Val Asp Pro Val Phe Gln Ala Lys Met Leu Asp
99                  20                    25                    30
100     Met Leu Lys Gln Thr Gly Arg Pro Glu Met Val Val Gly Trp Tyr His
101             35                    40                    45
102     Ser His Pro Gly Phe Gly Cys Trp Leu Ser Gly Val Asp Ile Asn Thr
103             50                    55                    60
104     Gln Gln Ser Phe Glu Ala Leu Ser Glu Arg Ala Val Ala Val Val Val
105     65                    70                    75                    80
106     Asp Pro Ile Gln Ser Val Lys Gly Lys Val Val Ile Asp Ala Phe Arg
107                   85                    90                    95
108     Leu Ile Asn Ala Asn Met Met Val Leu Gly His Glu Pro Arg Gln Thr
109                   100                   105                   110
110     Thr Ser Asn Leu Gly His Leu Asn Lys Pro Ser Ile Gln Ala Leu Ile
111             115                   120                   125
112     His Gly Leu Asn Arg His Tyr Tyr Ser Ile Thr Ile Asn Tyr Arg Lys
113             130                   135                   140
114     Asn Glu Leu Glu Gln Lys Met Leu Leu Asn Leu His Lys Lys Ser Trp
115     145                   150                   155                   160
116     Met Glu Gly Leu Thr Leu Gln Asp Tyr Ser Glu His Cys Lys His Asn
117                   165                   170                   175
118     Glu Ser Val Val Lys Glu Met Leu Glu Leu Ala Lys Asn Tyr Asn Lys
119                   180                   185                   190
120     Ala Val Glu Glu Glu Asp Lys Met Thr Pro Glu Gln Leu Ala Ile Lys
121             195                   200                   205
122     Asn Val Gly Lys Gln Asp Pro Lys Arg His Leu Glu Glu His Val Asp
123             210                   215                   220
124     Val Leu Met Thr Ser Asn Ile Val Gln Cys Leu Ala Ala Met Leu Asp
125     225                   230                   235                   240
126     Thr Val Val Phe Lys
127                   245
129 <210> SEQ ID NO: 5
130 <211> LENGTH: 421
131 <212> TYPE: PRT
132 <213> ORGANISM: Homo sapiens
133 <400> SEQUENCE: 5
134     Met Pro Asp His Thr Asp Val Ser Leu Ser Pro Glu Glu Arg Val Arg
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136     Ala Leu Ser Lys Leu Gly Cys Asn Ile Thr Ile Ser Glu Asp Ile Thr
137             20                    25                    30
138     Pro Arg Arg Tyr Phe Arg Ser Gly Val Glu Met Glu Arg Met Ala Ser
139             35                    40                    45
140     Val Tyr Leu Glu Glu Gly Asn Leu Glu Asn Ala Phe Val Leu Tyr Asn
141             50                    55                    60
142     Lys Phe Ile Thr Leu Phe Val Glu Lys Leu Pro Asn His Arg Asp Tyr
143     65                    70                    75                    80
144     Gln Gln Cys Ala Val Pro Glu Lys Gln Asp Ile Met Lys Lys Leu Lys
145             85                    90                    95
146     Glu Ile Ala Phe Pro Arg Thr Asp Glu Leu Lys Asn Asp Leu Leu Lys
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Input Set : **N:\Crf3\RULE60\10723475.raw**
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```
147                 100               105               110
148      Lys Tyr Asn Val Glu Tyr Gln Glu Tyr Leu Gln Ser Lys Asn Lys Tyr
149             115               120               125
150      Lys Ala Glu Ile Leu Lys Lys Leu Glu His Gln Arg Leu Ile Glu Ala
151         130               135               140
152      Glu Arg Lys Arg Ile Ala Gln Met Arg Gln Gln Gln Leu Glu Ser Glu
153      145             150               155               160
154      Gln Phe Leu Phe Phe Glu Asp Gln Leu Lys Lys Gln Glu Leu Ala Arg
155             165               170               175
156      Gly Gln Met Arg Ser Gln Gln Thr Ser Gly Leu Ser Glu Gln Ile Asp
157             180               185               190
158      Gly Ser Ala Leu Ser Cys Phe Ser Thr His Gln Asn Asn Ser Leu Leu
159             195               200               205
160      Asn Val Phe Ala Asp Gln Pro Asn Lys Ser Asp Ala Thr Asn Tyr Ala
161         210               215               220
162      Ser His Ser Pro Pro Val Asn Arg Ala Leu Thr Pro Ala Ala Thr Leu
163      225               230               235               240
164      Ser Ala Val Gln Asn Leu Val Val Glu Gly Leu Arg Cys Val Val Leu
165             245               250               255
166      Pro Glu Asp Leu Cys His Lys Phe Leu Gln Leu Ala Glu Ser Asn Thr
167             260               265               270
168      Val Arg Gly Ile Glu Thr Cys Gly Ile Leu Cys Gly Lys Leu Thr His
169             275               280               285
170      Asn Glu Phe Thr Ile Thr His Val Ile Val Pro Lys Gln Ser Ala Gly
171         290               295               300
172      Pro Asp Tyr Cys Asp Met Glu Asn Val Glu Glu Leu Phe Asn Val Gln
173      305               310               315               320
174      Asp Gln His Asp Leu Leu Thr Leu Gly Trp Ile His Thr His Pro Thr
175             325               330               335
176      Gln Thr Ala Phe Leu Ser Ser Val Asp Leu His Thr His Cys Ser Tyr
177             340               345               350
178      Gln Leu Met Leu Pro Glu Ala Ile Ala Ile Val Cys Ser Pro Lys His
179             355               360               365
180      Lys Asp Thr Gly Ile Phe Arg Leu Thr Asn Ala Gly Met Leu Glu Val
181         370               375               380
182      Ser Ala Cys Lys Lys Lys Gly Phe His Pro His Thr Lys Glu Pro Arg
183      385               390               395               400
184      Leu Phe Ser Ile Cys Lys His Val Leu Val Lys Asp Ile Lys Ile Ile
185             405               410               415
186      Val Leu Asp Leu Arg
187             420
189 <210> SEQ ID NO: 6
190 <211> LENGTH: 461
191 <212> TYPE: PRT
192 <213> ORGANISM: Homo sapiens
193 <400> SEQUENCE: 6
194      Met Asp Gln Pro Phe Thr Val Asn Ser Leu Lys Lys Leu Ala Ala Met
195      1             5               10                15
196      Pro Asp His Thr Asp Val Ser Leu Ser Pro Glu Glu Arg Val Arg Ala
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RAW SEQUENCE LISTING   DATE: 08/27/2004
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Input Set : N:\Crf3\RULE60\10723475.raw
Output Set: N:\CRF4\08272004\J723475.raw

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197                 20                  25                  30
198   Leu Ser Lys Leu Gly Cys Asn Ile Thr Ile Ser Glu Asp Ile Thr Pro
199             35                  40                  45
200   Arg Arg Tyr Phe Arg Ser Gly Val Glu Met Glu Arg Met Ala Ser Val
201             50                  55                  60
202   Tyr Leu Glu Glu Gly Asn Leu Glu Asn Ala Phe Val Leu Tyr Asn Lys
203   65                  70                  75                  80
204   Phe Ile Thr Leu Phe Val Glu Lys Leu Pro Asn His Arg Asp Tyr Gln
205                 85                  90                  95
206   Gln Cys Ala Val Pro Glu Lys Gln Asp Ile Met Lys Lys Leu Lys Glu
207             100                 105                 110
208   Ile Ala Phe Pro Arg Thr Asp Glu Leu Lys Asn Asp Leu Leu Lys Lys
209             115                 120                 125
210   Tyr Asn Val Glu Tyr Gln Glu Tyr Leu Gln Ser Lys Asn Lys Tyr Lys
211         130                 135                 140
212   Ala Glu Ile Leu Lys Lys Leu Glu His Gln Arg Leu Ile Glu Ala Glu
213   145                 150                 155                 160
214   Arg Lys Arg Ile Ala Gln Met Arg Gln Gln Leu Glu Ser Glu Gln
215             165                 170                 175
216   Phe Leu Phe Phe Glu Asp Gln Leu Lys Lys Gln Glu Leu Ala Arg Gly
217             180                 185                 190
218   Gln Met Arg Ser Gln Gln Thr Ser Gly Leu Ser Glu Gln Ile Asp Gly
219             195                 200                 205
220   Ser Ala Leu Ser Cys Phe Ser Thr His Gln Asn Asn Ser Leu Leu Asn
221             210                 215                 220
222   Val Phe Ala Asp Gln Pro Asn Lys Ser Asp Ala Thr Asn Tyr Ala Ser
223   225                 230                 235                 240
224   His Ser Pro Pro Val Asn Arg Ala Leu Thr Pro Ala Ala Thr Leu Ser
225             245                 250                 255
226   Ala Val Gln Asn Leu Val Val Glu Gly Leu Arg Cys Val Val Leu Pro
227             260                 265                 270
228   Glu Asp Leu Cys His Lys Phe Leu Gln Leu Ala Glu Ser Asn Thr Val
229             275                 280                 285
230   Arg Gly Ile Glu Thr Cys Gly Ile Leu Cys Gly Lys Leu Thr His Asn
231         290                 295                 300
232   Glu Phe Thr Ile Thr His Val Ile Val Pro Lys Gln Ser Ala Gly Pro
233   305                 310                 315                 320
234   Asp Tyr Cys Asp Met Glu Asn Val Glu Glu Leu Phe Asn Val Gln Asp
235             325                 330                 335
236   Gln His Asp Leu Leu Thr Leu Gly Trp Ile His Thr His Pro Thr Gln
237             340                 345                 350
238   Thr Ala Phe Leu Ser Ser Val Asp Leu His Thr His Cys Ser Tyr Gln
239             355                 360                 365
240   Leu Met Leu Pro Glu Ala Ile Ala Ile Val Cys Ser Pro Lys His Lys
241         370                 375                 380
242   Asp Thr Gly Ile Phe Arg Leu Thr Asn Ala Gly Met Leu Glu Val Ser
243   385                 390                 395                 400
244   Ala Cys Lys Lys Lys Gly Phe His Pro His Thr Lys Glu Pro Arg Leu
245             405                 410                 415
```

```
RAW SEQUENCE LISTING ERROR SUMMARY     DATE: 08/27/2004
PATENT APPLICATION:  US/10/723,475     TIME: 11:58:16

     Input Set : N:\Crf3\RULE60\10723475.raw
     Output Set: N:\CRF4\08272004\J723475.raw
```

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the
Sequence Listing to ensure that a corresponding explanation is presented in the <220>
to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:1; Xaa Pos. 2,4,5,6,7,8,9,10,11,12,13
Seq#:2; Xaa Pos. 3,5,8,9,10,11,12,13,15,16

Invalid Line Length:
The rules require that a line not exceed 72 characters in length. This includes spaces.

Seq#:1; Line(s) 5

VERIFICATION SUMMARY   DATE: 08/27/2004
PATENT APPLICATION: **US/10/723,475**   TIME: 11:58:16

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L:26 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:29 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:1
L:30 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:1 after pos.:0
L:39 M:281 W: Numeric Fields not Ordered, <221> Sort in ascending order!
L:42 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:45 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:48 M:258 W: Mandatory Feature missing, <220> Tag not found for SEQ ID#:2
L:49 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:2 after pos.:0
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